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By Electronic Mail

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Re: Status Report Required by No-Action Assurance
Puerto Rico Electric Power Authority

Dear Ms. Bodine and Mr. Brooks:

I write on behalf of the Puerto Rico Electric Power Authority ("PREPA") to provide the United States Environmental Protection Agency ("EPA") with a status report on PREPA's progress in restoring its power generation and transmission system in the wake of Hurricanes Irma and Maria. This report is required by the no-action assurance ("the NAA") issued by EPA on October 6, 2017, extended on November 17, 2017, amended on December 19, 2017, and extended on January 31, 2018. This status report is intended to provide EPA with an update on the progress PREPA has made to restore the grid; progress made and actions taken to address issues covered by the NAA; and any issues covered by the NAA that are anticipated to continue beyond March 30, 2018. By the terms of EPA's January 31, 2018 extension of the NAA, this status report was required by no later than Saturday, March 17, 2018. By agreement of EPA, the status report due date was extended to Monday, March, 19, 2018.

Since PREPA's last NAA request on January 31, 2018, PREPA has continued to make significant progress towards restoring full power to the island in the face of the unprecedented

devastation and destruction wrought first by Hurricane Irma, and then Hurricane Maria. Accordingly, PREPA does not anticipate requiring an extension with respect to many of the issues covered by the NAA. However, some continuing issues remain, as described in this report. Because of these lingering difficulties, PREPA will request that EPA extend limited aspects of the NAA. Extending the NAA will allow PREPA to continue its ongoing work to restore power to the island as effectively as possible, as it grows closer to completing this monumental task.

The first section of this report provides an overview of PREPA's progress in restoring the grid, the status and utilization of PREPA's generating facilities, and continuing issues that are affecting PREPA's ability to operate its system in a fully compliant manner. The second section of this report discusses in detail the progress that PREPA has made with regard to each of the issues covered by the January 31 extension of the NAA.

The January 31 extension grants PREPA relief through March 30, 2018, for issues arising under the Clean Air Act as they relate to PREPA's Title V permits,[1] and the underlying requirements contained therein applicable to PREPA's electric generating units, if those units are unable to comply due to impacts from Hurricanes Irma and Maria. This report discusses the continuing issues PREPA has encountered, areas in which PREPA has been unable to meet its existing obligations, and the efforts and significant progress PREPA has made to resolve these issues. While PREPA anticipates that several of these issues will continue past March 30, 2018, others are likely to be resolved by that date. Accordingly, PREPA will likely need to request a tailored extension of certain aspects of the NAA until April 30, 2018.

The January 31 extension also extended the coverage of the December 19 amendment to the NAA, and grants PREPA relief through March 30, 2018, for issues related to reporting requirements under the Clean Air Act.[2] As described below, PREPA has continued to make progress in submitting the reports covered by the NAA and will continue to work diligently to submit the remaining required reports on a rolling basis as quickly as it can complete them. While PREPA has finally been able to begin returning personnel to their normal duties, a significant backlog in information gathering and reporting has accumulated, and PREPA will need time to catch up. Moreover, it remains vital for PREPA to have the flexibility to divert personnel to operational tasks as necessary to restore power to the island as quickly as possible. Accordingly, PREPA will need to request an extension of the NAA as it relates to reporting issues until April 30, 2018.

I. Overview of the Status of Restoration of the Grid and Current Capacity of Generation

Transmission Lines -- PREPA has made significant progress on restoring the transmission grid. After Hurricane Maria, PREPA estimates that 80 to 90% of the grid had been damaged in some

[1] The applicable Title V permits include permit numbers PFE-TV-4911-63-0212-0244 (Aguirre Power Station), PFE-TV-4911-70-1196-0015 (Palo Seco Steam Power Plant), TV-4911-31-0397-0021 (South Coast Steam Power Plant), PFE-TV-4911-65-1196-0016 (San Juan Steam Power Plant), PFTE-TV-4911-07-0897-0043 (Cambalache Combustion Turbine Plant), PFE-TV-4911-19-0306-0447 (Daguao Turbine Power Block), PFE-TV-4911-30-1107-0991 (Jobos Turbine Power Block), TV-4911-63-1196-0014 (Mayaguez), PFE-TV-4911-74-0106-0021 (Vega Baja Turbine Power Block), and PFE-TV-4911-77-0707-0759 (Yabucoa Turbine Power Block).

[2] The reporting requirements that were covered by the December 19 amendment to the NAA are identified in Table A of that document. They are also carried over into Table A of the January 31 extension.

way. As of the date of this report, power has been restored to approximately 91% of clients across the island.[3] This figure represents a substantial improvement over the last few months.

PREPA, the Army Corps of Engineers, and other utility forces are making great progress in repairing the remaining damage, and the month of March has thus far been replete with efforts to continue to obtain needed materials,[4] and to repair major transmission lines to restore reliability, stability, and redundancy to the transmission system. However, despite this progress, substantial work still remains to be done to restore power in more remote areas and to stabilize the transmission system across the island.

PREPA's network remains in a state of active repair and continues to experience grid instability, surges, and transmission bottlenecks. Indeed, issues with surges and instability on the grid have continued to necessitate cycling of PREPA's baseload units and have caused several blackouts since PREPA's last request for an extension of the NAA. And, as PREPA continues to bring online its previously-damaged high voltage transmission lines, the potential for surges and power failures persists. As recently as March 13, there was a failure on a line between Cambalache and Bayamón (to the south of San Juan), and 6 to 7 towns lost power. Moreover, on March 1, the system tripped due to a line that failed, which caused a blackout in the northern part of the island and impacted the operations of the San Juan and Palo Seco plants causing them to no longer be synched with the electrical system grid.[5] This blackout also caused boiler tube leakage problems at Palo Seco Unit 3. Another major blackout occurred on February 11, causing the San Juan and Palo Seco units to trip and cycle down, again causing them to not be synched with the grid. These continued issues with surges, cycling, and blackouts mean that deviations from emissions limits, including opacity, sulfur dioxide ("SO_2"), particulate matter ("PM"), carbon monoxide ("CO"), and nitrogen oxide ("NO_x") limits, are continuing to occur.

In addition to issues with surges and blackouts, work remains ongoing to repair core transmission lines. Two of the four major 230,000 volt transmission lines leading from the Aguirre Power Complex in the south to the northern and eastern parts of the island remain damaged and cannot support a substantial portion of the available generation coming from Aguirre. Output from the AES coal plant, which is also located in the south, is also limited by these lines. It is uncertain when these lines will be sufficiently repaired to be able to reliably transmit generation to other parts of the island. Indeed, work continues on quite a few major lines. As reported by PREPA Executive Director Justo González Torres in early March, reconstruction work was continuing on transmission lines designated as 36300 (Jobos to Maunabo), 36800 (Palmer to Fajardo), 37800 (Buen Pastor to Caguas), 37400 (Candelaria to Dorado) and 50700 (Guayama to Yabucoa), to restore stability,

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[3] Note that these numbers are estimates only.

[4] For instance, on March 2, 2018, PREPA's Executive Director Justo González Torres reported that materials are continuously being delivered. He estimated that, in the coming weeks, 246 additional transformers would be delivered, and that within the next 14 days, 7,463 poles and more than 1,000 additional conductor cable miles would arrive. Puerto Rico Electric Power Authority, Notice, *AEE energizes around 90% of customers all over the island*, (March 2, 2018), https://www.aeepr.com/Noticias/noticiasread.asp?r=RZLGUBUNMZ. As of March 2, Executive Director Justo González Torres reported that approximately 6,438 transformers, 38,700 poles, and more than 16,000 miles of conductor cable had already been delivered as a part of the recovery effort. *Id.*

[5] Danica Coto, THE SEATTLE TIMES, *Blackout hits Puerto Rico after 2 power plants shut down* (March 1, 2018), https://www.seattletimes.com/business/blackout-hits-puerto-rico-after-2-power-plants-shut-down/.

reliability, and redundancy to the electrical system.[6] Thus, while significant progress has been made, work is ongoing to reconstruct and stabilize PREPA's system.

Aguirre -- Although repair work remains, many portions of the grid have been repaired to a degree that most of PREPA's baseload generating units generally are no longer limited to low loads. A major exception is the Aguirre Power Complex, which must continue to operate at limited loads because of continuing damage to transmission lines leading from the plant to the north and east, as noted above. For instance, on March 16, 2018, output at Aguirre was at approximately 390 MW (out of a total capacity of 1536 MW).[7] While output fluctuates, PREPA has only been able to operate one of Aguirre's two 450 MW steam electric generating units since the hurricanes, and has generally been able to do so only at a limited capacity. The other units at Aguirre are also not operating at significant loads, and are also limited by the damaged transmission lines.[8]

Aguirre Unit 1 is out-of-service due to grid limitations, but PREPA has scheduled the unit to return to service this week. Although the distribution of load shifts between units at the Aguirre Power Complex, the overall amount of power Aguirre is able to generate is limited by the total available capacity of the transmission lines serving Aguirre, which is currently at approximately 60%.[9] Until the major 230,000 volt transmission lines that are still damaged from the hurricanes are repaired, the Aguirre Power Complex will be constrained to limited loads.[10] These limitations on the amount of power coming from the southern part of the island affect power usage across the island, including in the north, where PREPA must operate other units (e.g., its limited-use units) to make up the difference, as described in more detail below.

Costa Sur -- PREPA has made great progress at its South Coast or "Costa Sur" facility and is pleased to notify EPA that power generation and electricity distribution at the Costa Sur facility have stabilized. The Costa Sur facility is generally no longer limited to low loads due to the grid situation. Additionally, PREPA was recently able to place Costa Sur Unit 5 back in service, which had been damaged during Hurricane Maria. That said, only Unit 5 is currently operating. Costa Sur Unit 6 is out-of-service for an environmental outage until approximately April 18, 2018. PREPA was not able to take Unit 6 out-of-service until now because continued operation of the unit was necessary in the aftermath of the hurricanes—especially given that Unit 5 was not working. Costa Sur Units 3 and 4 are designated limited-use units under the Mercury and Air Toxics Standard rule ("MATS"), and are not currently running.[11]

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[6] Puerto Rico Electric Power Authority, Notice, *AEE energizes around 90% of customers all over the island* (March 2, 2018), https://www.aeepr.com/Noticias/noticiasread.asp?r=RZLGUBUNMZ.

[7] For instance, on March 16, 2018, approximately 390 MW of 900 MW total were online at Aguirre's steam units. On March 16, 2018, none of the 592 MW total were online at Aguirre's combined cycle units, and the Aguirre 42 MW combustion turbine was also offline.

[8] *See, e.g.*, *supra* note 7.

[9] Accordingly, even with both Aguirre Unit 1 and Unit 2 in service, the units will need to share the available transmission capacity, which as noted above, is limited due to remaining damage to major transmission lines.

[10] The 454 MW AES coal plant utilizes the same transmission lines, and was only operating at about 60% of its capacity as of March 16, 2018.

[11] Costa Sur's combustion turbine is also not online; it was damaged before the hurricane.

San Juan -- In terms of the San Juan plant, San Juan Units 5, 7, and 8 are currently in operation.[12] Of the San Juan plant steam units, PREPA reported in its last status report that San Juan Units 7, 8, and 9 were running at approximately 80% to 90% capacity to meet demand and restore power to the island. Although they are limited-use units, Units 7 and 8 continue to run at about 80 to 90% capacity and are necessary to meet demand. San Juan Unit 9 was taken out-of-service on March 8, 2018, for an overdue environmental outage, and will thus not be able to operate for the next approximately 6 to 7 weeks.[13] PREPA could not perform this outage until very recently, because Unit 9 was one of the only units that was able to operate in the immediate aftermath of Hurricane Maria and continued to be necessary to the power restoration effort until very recently. Of the San Juan combined cycle units, PREPA is currently operating Unit 5. PREPA had to take Unit 6 out-of-service due to the demineralized water availability issues discussed in the prior status report. Although these water availability issues have now been resolved (as discussed in more detail below), San Juan Unit 6 remains out due to routine maintenance issues. As described above, while the San Juan plant does not have problems with low load, it has been affected by surges and other electrical disturbances and recent blackouts.

Palo Seco -- The Palo Seco facility is also located in the north near San Juan. The Palo Seco baseload units were taken out-of-service before the hurricanes due to structural issues, and repair work on these units was delayed by the hurricanes. In the aftermath of Hurricane Maria, the Corps installed two 25 MW temporary generators at Palo Seco to provide emergency power, and these generators remain online. In early January, after completion of stabilization work, PREPA placed Palo Seco Unit 3 back into service. Palo Seco Unit 1 had also been out-of-service since before the hurricane, but PREPA was able to place it back in service on January 24, 2018, to meet demand in the north and other parts of the island. Although Palo Seco Unit 1 is also a limited-use unit, its continued operation has been essential due to limitations and outages associated with other plants, as discussed in more detail below. Like the San Juan plant, Palo Seco has also been affected by surges and blackouts.

Other Power Units -- In terms of the combustion turbines, of Mayaguez's four 55 MW units, two are online and are operating at lower capacity due to mechanical problems that are unrelated to the status of the grid or the hurricanes.[14] Mayaguez, has recently been affected by surges and grid-instability issues. For example, a line trip and blackout that occurred in early March 2018, temporarily prevented Mayaguez from operating its steam injection equipment to control NO_x, as discussed in more detail below. PREPA is not seeking further relief with respect to Cambalache, except with regard to the reporting requirements described in Section II.J, below.

In terms of renewable energy, only approximately 5 MW of wind generation and 4 MW of solar generation are currently available due to continued problems with cycling and frequency on the grid.

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[12] Unit 10 of the San Juan plant has been out-of-service since before the hurricanes.

[13] PREPA anticipates being able to bring San Juan Unit 9 back into service the first week of May 2018.

[14] Of the smaller combustion turbines, Vega Baja and Jobos remain offline due to issues unrelated to the hurricanes, while Daguao and Yabucoa are online. Yabucoa has a total capacity of 42 MW, with one 21 MW turbine out-of-service. The Army Corps of Engineers is providing replacement power at Yabucoa by use of a 25 MW generator. Daguao also has a total capacity of 42 MW, with all power to the grid currently available.

In sum, PREPA is making progress, and issues are occurring less frequently. However, because of the status of the grid—which remains susceptible to damaged segments, instability, surges, and load swings—power generation and electricity distribution have generally not been stabilized at the facilities covered by the NAA, with the exception of Costa Sur. Accordingly, as described in more detail below, PREPA will request that EPA extend certain limited aspects of the NAA until April 30, 2018.

II. Status Report on Issues Covered by the January 31 Extension of the NAA and Need for Continued Relief

The NAA grants PREPA relief through March 30, 2018, for issues arising under the Clean Air Act as they relate to applicable federally-enforceable regulatory requirements and PREPA's Title V permits (and requirements contained therein), at PREPA's electric generating units, if those units are unable to comply due to impacts from Hurricanes Irma and Maria. More specifically, the January 31 extension of the NAA applies to any violations, actions taken, or not taken, in response to the following conditions:

- Emissions limits (including, but not limited to, opacity limits) from operating PREPA's electric generating units at high- or low-load output levels necessitated by the circumstances;
- Operation in excess of heat input limits at the San Juan and Palo Seco facilities, and in excess of operating hours limits at the San Juan, Cambalache, and Mayaguez facilities;
- Operating emergency generators using fuel with sulfur content up to 0.05% sulfur, where such fuel was added to the generator's fuel tank prior to February 1, 2018;[15]
- Unit and/or control equipment malfunctions, shutdowns, or restarts;
- Inoperable or damaged process, production, control, or monitoring equipment (excluding all fuel analysis activities);
- Disruptions in material supplies (e.g., demineralized water);
- Compliance with the Mercury and Air Toxics Standard;
- Temporary operation of mobile diesel generators to restore power and start units and auxiliary equipment; and
- The shutdown or bypass of air pollution control equipment to shed parasitic load.

The January 31 extension also extended NAA coverage until March 30, 2018 for the reporting and recordkeeping requirements identified in the December 19 amendment.[16]

Based on the current status of its system, PREPA will request to extend limited aspects of the NAA through April 30, 2018. The following sections discuss the progress that PREPA has made with regards to each of the conditions identified above, as well as continuing issues that remain and whether PREPA will need to request an extension of the NAA for the condition.

A. Emissions limits from PREPA's electric generating units at high- or low-load output levels necessitated by the circumstances

As described in PREPA's last status report, since the hurricanes, certain PREPA generating units have had to operate at low loads due to the status of the grid. When this was the case, the

[15] No additional noncompliant fuel may be added on or after February 1, 2018.

[16] The NAA allows PREPA 30 additional days after expiration of the NAA to submit the required reports.

units experienced deviations for NO_x, SO_2, opacity, CO, and PM. Moreover, PREPA's units that utilize steam or water injection technology to control NO_x (i.e., the Cambalache units (steam injection), Mayaguez units (water injection), and San Juan combined cycle units (steam injection)[17]) cannot utilize this technology if they are running below a certain capacity level. If the facilities cannot utilize this equipment, opacity, NO_x, and CO deviations are likely to result.

Issues related to low loads at PREPA's plants have significantly improved over the last two months as PREPA has been able to repair a large portion of the remaining damaged transmission lines. As a result, many of PREPA's large baseload units—with the notable exception of Aguirre—are now largely operating at higher loads. Accordingly, PREPA does not anticipate requesting a general extension of the NAA for emissions deviations due to low-load output levels necessitated by the circumstances, except for at Aguirre. As noted above, several major transmission lines leading from Aguirre remain damaged and are limiting output from the plant. As a result, Aguirre is continuing to experience opacity deviations. Accordingly, PREPA will request an extension of the NAA until April 30, 2018, for emissions limits due to low-load output levels at Aguirre.

While PREPA does not anticipate requesting a load output-related extension of the NAA for its plants other than Aguirre, PREPA will request limited relief related to the continued episodic electrical disturbances that are occurring and causing emission deviations at its plants. While most of PREPA's plants are generally able to operate at higher loads, surges, line trips, and other instability issues on the grid continue to cause cycling and have led to several recent blackouts. While these surges are decreasing in frequency—now occurring on about a bi-weekly basis, whereas before they were occurring every 2 to 3 days—they are still causing blackouts and other conditions that lead to emission deviations. As described above, on March 1, the system tripped due to a line that failed, which caused a blackout in the northern part of the island and impacted the operations of the San Juan and Palo Seco plants causing them to no longer be synched with the electrical system grid. Another major blackout occurred on February 11, causing the San Juan and Palo Seco units to trip and cycle down again causing them to not be synched with the grid. Yet another blackout occurred in several northern towns this past week on March 13 due to a line trip between Cambalache and Bayamón.

Continued issues with surges and blackouts mean that deviations from emission limits will likely continue to occur. For instance, when a section of transmission line fails and a unit shuts down, it loses the ability to provide air flow and ventilation to the units. During that period of instability, opacity deviations are likely to result. Blackouts also cause the units to cycle, and PREPA will then need to place them back in service. More emission deviations are then likely to occur during the startup of the units after a blackout or line trip, including opacity, NO_x, and CO deviations. Indeed, PREPA has identified opacity deviations that occurred at the San Juan plant both on February 11 and 12, due to the blackout and PREPA's subsequent efforts to place the plant back in service the following day. Similar deviations occurred at the Palo Seco plant, as well.

Moreover, power line failures and other issues have caused the inadvertent shutdown of PREPA's steam injection equipment that controls NO_x at several of the facilities. This has been an issue at San Juan and Mayaguez facilities, as described in more detail below. Thus, although PREPA's San Juan, Cambalache, and Mayaguez units are now generally able to operate at higher loads and operate their steam injection equipment, PREPA will request a narrow extension of the

[17] San Juan Units 7-9 do not use steam injection.

NAA with regard to this issue for the San Juan combined cycle units and Mayaguez units to the extent that failures or bypass of the steam injection equipment is caused by electrical system disturbances.

In sum, due to ongoing instability, surges, line trips, blackouts, and other grid limitations, emission deviations remain a challenge on a sporadic basis. Accordingly, PREPA will likely need to request an extension of the NAA to cover deviations at its plants that are caused by electrical system disturbances.

B. Operation in excess of heat input limits at the San Juan and Palo Seco facilities and operating hour limits at the San Juan, Cambalache, and Mayaguez Facilities

PREPA has not had issues with meeting operating hour limits at the San Juan, Cambalache, and Mayaguez facilities. Accordingly, PREPA will not need to request an extension of the NAA for permit-based operating hour limits at these facilities.

However, PREPA will likely require continued, short-term relief from the heat input limitation for San Juan Units 7-8 and Palo Seco Unit 1, which are designated as limited-use units under MATS.[18] Multiple PREPA generating units are currently limited in various ways or are out-of-service, as described above. Of particular importance, the Aguirre Power Complex is still operating at limited loads due to ongoing damage to major transmission lines caused by the hurricanes. The situation at Aguirre—PREPA's largest baseload plant—requires PREPA to operate its limited-use units to meet demand.

In addition, San Juan Unit 9 must be taken out-of-service for environmental outage for approximately 6 to 7 weeks. PREPA could not perform this outage until recently, because Unit 9 was one of the only units that was able to operate in the immediate aftermath of the storm and continued to be necessary to the power restoration effort until very recently.[19] Costa Sur Unit 6 also must be taken out-of-service for an environmental outage until mid-April. As a result, only Costa Sur Unit 5 is available.[20] As noted above, Costa Sur Unit 6 was in a similar situation as San Juan Unit 9—it was necessary to continue to run the unit, as, for some time, it was the only operating baseload unit at Costa Sur. Until recently, Costa Sur Unit 5 was out-of-service due to damage from Hurricane Maria. Thus, while PREPA's generation profile is slowly returning to normal, the effects of the hurricanes endure and continue to ripple and affect the use of these units.

Given these outages and limitations on the use of Aguirre, PREPA will need to continue to operate San Juan Units 7 and 8 and Palo Seco Unit 1, as doing so remains critical to serving the island, including the San Juan metropolitan area. The San Juan units have exceeded the 8% heat

[18] PREPA has not been running Palo Seco Unit 2 or Costa Sur Units 3 or 4, which are limited-use units, and thus does not require relief for these three units.

[19] San Juan Units 6 and 10 are currently out-of-service, albeit for reasons unrelated to the hurricane. While Unit 6 was originally taken out-of-service due to water availability problems stemming from the hurricanes, it currently remains out due to routine maintenance issues. Unit 10 has been out-of-service since before the hurricane.

[20] The other two baseload units at Costa Sur—Units 3 and 4—are also limited-use units and are not currently running.

input limit as measured through fuel use.[21] Palo Seco Unit 1 has also exceeded its heat input limits to meet demand. Palo Seco Unit 1 had been out-of-service since before the hurricane, but PREPA was able to place it back in service in late January.

PREPA thus will likely request an extension of the NAA for these three limited-use units. PREPA anticipates requesting an extension only until April 30, 2018. At that point, PREPA is hopeful that the situation at Aguirre will have improved. Moreover, Costa Sur Unit 6 will be back online and San Juan Unit 9 will be able to return to service shortly after that point.

C. Operating emergency generators using fuel with sulfur content up to 0.05% sulfur, where such fuel was added to the generator's fuel tank prior to February 1, 2018

As described in PREPA's last status report, PREPA has made significant progress related to the sulfur content of fuels. Accordingly, in its last request for an extension of the NAA, PREPA requested only very limited relief as it related to legacy 0.05% sulfur-by-weight fuel that remains in the generators and the tanks servicing some generators, and was added prior to February 1, 2018. This remains an issue at Mayaguez, where PREPA used higher sulfur fuel in the emergency generator because lower sulfur fuels were not available. However, the existing legacy fuel in the generator and tank will not be burned by the end of March, because the generators at the plant are now only running infrequently. As a result, PREPA plans to perform a lab analysis on the sulfur content of the fuel. If it exceeds the required sulfur content or if the test results do not arrive in time, PREPA will remove this legacy fuel before March 30 so it no longer continues to be an issue. PREPA thus does not anticipate requiring an extension of the NAA with respect to this issue.

D. Unit and/or control equipment malfunctions, shutdowns, or restarts

PREPA will require continued relief for issues arising from the malfunction, shutdown, or start-up of its units and control equipment. As noted above, PREPA continues to experience malfunctions and unscheduled shutdowns and start-ups. Surges, trips, and instability continue to persist on the grid and, as noted above, have contributed to blackouts and caused certain units to be unable to provide power to the grid. As described above, on February 11 and March 1, the system tripped causing blackouts, which impacted the operations of the San Juan and Palo Seco plants causing them to no longer be synched with the electrical system grid. The March 1 blackout also caused boiler tube leakage problems at Palo Seco Unit 3. PREPA is aware of opacity deviations that occurred at the San Juan plant as a result. Similar deviations occurred at Palo Seco. In addition, while frequent cycling is gradually becoming less of an issue, PREPA must continue to cycle its units to an unusual degree in response to these conditions.

The emission-related consequences of these blackouts and other electrical disturbances are discussed in detail in Section II.A above. In short, while progress has been made on this front, continued issues with cycling, surges, trips, and blackouts, mean that deviations from emissions limits may continue to occur. For instance, when a section of transmission line fails and a unit shuts down, it loses the ability to power the equipment on the units. During that period, opacity deviations occur. Opacity deviations also result during the restart of the unit. As another example, as recently as early March, the steam and water injection equipment to control NO_x at San Juan and Mayaguez

[21] *See* 40 C.F.R. § 63.10042 (defining the "limited-use liquid oil-fired subcategory").

temporarily shutdown as a result of cycling or shutdowns on the island, as discussed in more detail below.

Due to ongoing instability on the grid, this issue remains a challenge. Accordingly, PREPA will request an extension of the NAA with respect to this issue until April 30, 2018, to the extent that problems related to electrical disturbances trigger the malfunction, shutdown, and restart of its units and control equipment.

E. Inoperable or damaged process, production, control, or monitoring equipment (excluding all fuel analysis activities)

PREPA has made significant progress on restoring its process, production, control, and monitoring equipment. However, electrical disturbances continue to sporadically damage equipment at PREPA's plants. For instance, a blackout on March 1 caused boiler tube leakage problems at Palo Seco Unit 3, but PREPA has since repaired these problems. Similarly, recent power surges on power lines have rendered inoperable the steam and water injection controls at San Juan and Mayaguez for short periods of time. Moreover, it is uncertain what equipment issues may arise at Aguirre Unit 1 after it is restarted.

Given these continuing issues, there are a few narrow areas in which PREPA will request continued partial relief until April 30, 2018.

First, as described in more detail below in Section II.I, electrical disturbances, such as surges, trips, and blackouts, have caused malfunctions or shutdowns of steam and water injection equipment at the San Juan combined cycle units and Mayaguez units. Accordingly, PREPA will request an extension to cover inoperable or damaged steam and water injection equipment at the San Juan and Mayaguez facilities to the extent caused by electrical disturbances.

Furthermore, because Aguirre Unit 1 is being placed back into service, PREPA cannot know with certainty what issues will arise during start-up. For instance, in the last few days, PREPA identified problems with the Unit 1 programmable logic controller that communicates between the opacity monitor and the data acquisition system. PREPA has fixed this equipment, but additional issues could arise. Depending on the situation, PREPA may need to request a limited extension of the NAA with respect to this issue for Aguirre Unit 1.

In sum, issues associated with inoperable or damaged equipment have decreased significantly. As such, PREPA anticipates requesting an extension of the NAA on this issue only with respect to the steam injection equipment at San Juan Units 5-6 and water injection equipment at Mayaguez, and with respect to the equipment at Aguirre Unit 1, as described above.

F. Disruptions in material supplies (e.g., demineralized water)

In its last status report, PREPA described significant disruptions in access to demineralized water, which is needed for steam injection purposes and process water at the San Juan facility. The poor quality of water supplied by the Puerto Rico Aqueduct and Sewer Authority ("PRASA") had damaged PREPA's reverse osmosis plant and water service equipment. This damage disrupted PREPA's access to demineralized water and thus led to NO_x deviations at the San Juan plant. At

various times in 2018, San Juan Unit 5 or Unit 6 had to be taken out-of-service, due to insufficient demineralized water supply.

Since PREPA's last request for an NAA extension, PREPA has successfully repaired its reverse osmosis equipment. Accordingly, disruptions in material supplies, including demineralized water, are not currently an issue. PREPA thus does not anticipate needing to request an extension of the NAA with respect to this issue.

G. Mercury and Air Toxics Standards Issues

As noted above, in terms of limited-use units, San Juan Units 7 and 8 have exceeded their annual limit of 8% of their maximum heat input, averaged over a 24-month block period for the period beginning May 1, 2017.[22] Running these units in excess of the 8% limit has been essential to supplying power to the island in the aftermath of the hurricanes. In January 2018, PREPA also needed to bring Palo Seco Unit 1 online to serve demand due to grid constraints. This unit is also designated limited-use and has exceed the 8% heat input limit for the period beginning May 1, 2017. As described in more detail above, the use of these units continues to be essential to serve the island, because various other units are unavailable or face load limitations (e.g., Aguirre). That said, PREPA anticipates that it will only need an extension until April 30, 2018, as it expects that many of the issues with Aguirre will likely be resolved by then, and PREPA expects Costa Sur Unit 6 to be available by that date and San Juan Unit 9 to be available shortly after that point.

In terms of MATS emission limits, PREPA explained in its last report that the hurricanes had compounded issues associated with meeting PM emission limits at its base load plants. Specifically, PREPA explained that cycling and operating at low loads had forced PREPA to operate its baseload units at suboptimal conditions.

As described above, PREPA is now able to operate most of its MATS units at higher loads, and low-load-related deviations are thus significantly less of an issue. However, issues with frequent cycling will continue to lead to deviations at PREPA's baseload units. As described above, both San Juan and Palo Seco have faced cycling problems due to electrical disturbances. The notable exception to continued cycling problems is Costa Sur. PREPA thus does not anticipate that it will need to request an extension of MATS-related-emissions relief for Costa Sur. However, PREPA will request relief for its other plants to the extent that emissions deviations result from cycling problems.

With respect to testing under MATS, PREPA will request an extension of the NAA for Aguirre only. As described above, Aguirre has been restricted to operating at limited loads. PREPA currently plans to return Aguirre Unit 1 to service this week, but the use of both units continues to be limited due to the fact that two major transmission lines servicing Aguirre remain damaged. These issues have precluded quarterly emissions testing at Aguirre. PREPA has reached out to a testing company regarding testing for Aguirre, but needs to wait until the units are stable and near full loads before actually testing them. PREPA anticipates that this will occur soon, but it will likely need to request an extension of the NAA until April 30, 2018, for issues related to MATS testing for the Aguirre plant.

[22] *See* 40 C.F.R. § 63.10042 (defining the "limited-use liquid oil-fired subcategory" as "an oil-fired electric utility steam generating unit with an annual capacity factor when burning oil of less than 8 percent of its maximum or nameplate heat input, whichever is greater, averaged over a 24–month block contiguous period . . . .").

H. Temporary operation of mobile diesel generators to restore power and start units and auxiliary equipment

PREPA has progressively lowered its temporary operation of mobile diesel generators to restore power and start units and auxiliary equipment. However, as noted above, grid instability still remains a significant concern, and blackouts are continuing to occur on a sporadic basis, including two blackouts that occurred on March 13, 2018 and March 1, 2018. Moreover, transmission lines are still damaged in certain key areas, making it necessary for PREPA to be able to continue to utilize mobile diesel generators.

As one example, use of the generators at Palo Seco remains necessary because of the continuing limitations on PREPA's ability to operate Aguirre; these generators are operating at all times and remain key to ensuring reliability in the northern part of the island. As another example, the use of generators at Yabucoa is currently functioning as a micro grid as they are providing power to discrete areas only. These generators remain essential to restoring power, because of damage to the transmission lines servicing Yabucoa and the continued inability to rely on power from the Aguirre plant.

In sum, while PREPA is making progress on its use of mobile diesel generators, PREPA still requires flexibility to be able to operate mobile diesel generators on an as needed basis to restore power and to start its units and equipment. Accordingly, PREPA will request that EPA extend the NAA with respect to this issue until April 30, 2018.

I. Shutdown or bypass of air pollution control equipment to shed parasitic load

Low-load operating conditions no longer prevent PREPA from operating its steam and water injection equipment at the Mayaguez, Cambalache, and San Juan combined cycle facilities (Units 5 and 6). PREPA thus does not anticipate that it will need continued relief to allow bypass of steam and water injection systems as a result of low load operating conditions at the facilities.

However, as noted above, shutdowns and malfunctions of this equipment have occurred on an episodic basis due to electrical disturbances, such as line failures, surges, and blackouts. For instance, in early March, a power line failure on the western side of the island affected the Mayaguez plant's control of water injection. Due to grid surges in the voltage on the transmission lines, the plant was unable to supply water injection to Mayaguez Unit 3A for a few hours. Similarly, during the March 1 blackout in San Juan, the blackout caused a trip at San Juan Unit 5, which caused its steam injection equipment not to function for a period of time.

Accordingly, PREPA will request a limited extension of the NAA with respect to this issue until April 30, 2018, but only to the extent that such problems occur at the San Juan and Mayaguez facilities due to electrical disturbances, such as the situations described above. PREPA does not anticipate that it will need to request this relief with regard to the Cambalache facility.

J. Reporting and recordkeeping requirements covered by the December 19 Amendment and January 31 Extension

PREPA is using its best efforts to comply with its reporting and recordkeeping obligations, and has submitted many of the covered reports to EPA. In 2018, PREPA has submitted the Title V Semi-Annual Monitoring Report for all facilities for the first half of 2017; the Monthly Vanadium/Asphaltene Fuel Quality Report for all facilities for October 2017; and the Semi-Annual

Emergency Generator Compliance Report for Palo Seco for the second half of 2017. In addition, PREPA has completed several additional reports that will be submitted imminently. These reports include the Q4 2017 Quarterly Excess Emissions and Method 9 Reports for the Aguirre and Palo Seco facilities; the Monthly Vanadium/Asphaltene Fuel Quality Report for all facilities for November 2017; and the Q4 2017 Quarterly Excess Emissions Report for the Cambalache facility.

Moreover, as described in PREPA's last status report, in December 2017, PREPA submitted additional reports, including: the Q3 2017 Quarterly Excess Emissions and Method 9 Reports for the Aguirre and Palo Seco facilities; the Q3 2017 Quarterly Excess Emissions Report for the Cambalache facility; the Q3 2017 Quarterly Excess Emissions and Monitoring Report for the Costa Sur facility; the Semi-Annual Heat Input Report for the Costa Sur facility for April 2017 to September 2017; the Monthly Vanadium/Asphaltene Reports for all facilities for August 2017 and September 2017; and the Annual Emergency Generators Report for the Aguirre and Costa Sur facilities for 2016 to 2017.

PREPA is thus making progress on its reporting obligations and will continue to submit required reports for its facilities as soon as it is able to complete them. As PREPA reported in its last status report, PREPA has had to divert PREPA's personnel responsible for reporting to operational tasks related to managing PREPA's generation and restoring power to the island. More specifically, many of these personnel are working on maintenance issues at the units associated with placing the units back in service after outages and associated with the above-described surges and other electrical disturbances. At the larger plants, the personnel responsible for compliance are deployed to operational tasks, such as putting the units back in service after cycling, conducting maintenance tasks, and/or supervising personnel conducting maintenance activities. At the smaller combustion turbines (e.g., Daguao, Yabucoa), the diverted personnel are essentially running the units.

Such personnel diversions have been necessary to respond to the challenging operational landscape created by the enduring damage to PREPA's system, and many of PREPA operations personnel are working 24-hour day shifts to assist in operating PREPA's generation fleet. Nonetheless, some personnel are currently in the process of transitioning back to their normal duties. These personnel will seek to collect and assemble the required information as soon as possible, but this process will take time. PREPA still faces a considerable backlog, and completing all of the required reporting since the hurricanes will thus take some time. Moreover, although PREPA's communication capabilities have improved, especially at the larger plants, there remain some issues at the smaller combustion turbines that could slow this process.

Given the significant backlog of reports—in addition to any lingering restoration efforts PREPA's personnel may be called upon to assist with—PREPA will request that EPA extend the NAA for reporting and recordkeeping issues until April 30, 2018. PREPA requests this extension for the timely submission of the Clean Air Act reports identified in Table A of the January 31, 2018 extension of the NAA, as well as other Clean Air Act reports for each power generation facility that may come due while the NAA is in place.

Personnel are returning to their normal duties and PREPA is finally able to begin restoring sufficient resources to its reporting and recordkeeping compliance obligations. However, an extension of the NAA is essential to allow PREPA a reasonable time to complete these obligations. PREPA remains committed to reporting and recordkeeping, and will complete its obligations as soon as possible.

III. A Tailored Extension of the NAA Is Necessary to Protect the Public Welfare and is in the Public Interest

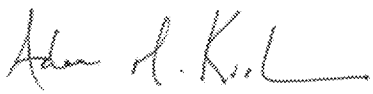
As described above, PREPA anticipates requesting a shorter and narrower extension of the NAA that is closely tailored to the current problems it is facing. A limited extension of aspects of the NAA, as described above, is necessary to protect public welfare as PREPA and the Commonwealth of Puerto Rico continue to resolve the extreme circumstances created by Hurricanes Irma and Maria. PREPA has made significant progress and is getting ever closer to its goal of restoring power to the entire island; however, recent estimates indicate that approximately 10% of clients still remain without power. Given that the grid is still suffering from sporadic instability and surges and that significant damage continues to affect core PREPA transmission lines, PREPA expects to continue to have issues with certain conditions covered by the NAA, as described above. As such, a tailored extension of the NAA is merited for the most persistent problems affecting PREPA's system.

The residents of the island need to have power fully restored as quickly as possible, and to ensure that happens, PREPA needs to maintain the flexibility required to provide that power as quickly and to the greatest extent possible. That flexibility is in the public interest given the extremely unusual circumstances produced by the hurricanes. Extending the NAA will ensure the swiftest resumption of power to the island.

PREPA will continue to provide further information to EPA as it becomes available. PREPA will further use its best efforts in keeping EPA abreast of the restoration of its grid and its progress towards a resumption of normal operation.

PREPA knows that EPA is taking all possible measures to assist the Commonwealth respond to, and recover from, the hurricanes, and we continue to stand ready to support the agency in those measures. We look forward to hearing from you soon.

Respectfully submitted,



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